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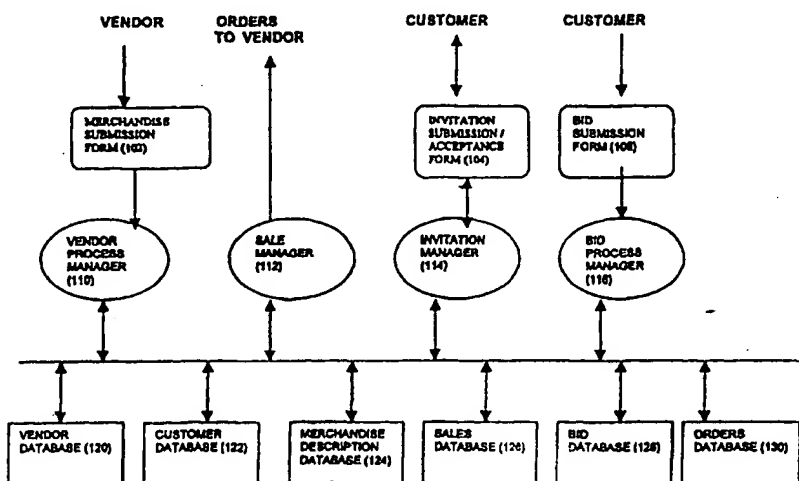


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(54) Title: **METHOD AND SYSTEM FOR LOW VOLUME BUYERS TO AGGREGATE PURCHASING POWER**



(57) Abstract

A method and system for low volume buyers to aggregate their purchasing power to gain high volume discounts. Vendors display information about their products and services along with a price schedule that provides greater discounts for bigger volume of purchases. For example, buying 1 unit costs \$100 per unit, 10 units would cost \$90 per unit, and 1000 units cost \$60 per unit. Another example of a volume discount is the price paid by each buyer is the total value demanded by the vendor divided equally between all interested buyers. Buyers then aggregate online to take advantage of these volume discounts. Unlike an auction model, where more buyers mean higher prices, here more buyers lead to lower prices.

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**METHOD AND SYSTEM FOR LOW VOLUME BUYERS TO AGGREGATE  
PURCHASING POWER**

**BACKGROUND OF THE INVENTION**

**Field of the Invention**

- 5           The present invention relates generally to electronic commerce and more particularly to forming temporary online communities to aggregate buying power and thereby reduce the purchase price of products of interest to the communities.

**Description of the Related Art**

- 10           Many vendors offer discounts for purchasing in high volumes. Typically the purchasing entity is a large corporation that is purchasing a high volume of a product either for its own consumption or to offer the product for sale to other entities who buy smaller units of the product. It is normally not possible for an individual buyer or a small company to avail  
15 itself of these high volume discounts.

- In the physical world, companies such as Sam's Club and Costco allow individuals and small companies to become members of their "purchasing club." Being a member of these clubs allows an individual to benefit from the purchasing power of the entire club membership. There  
20 are four important aspects to club membership. First, the membership is an up-front commitment, typically an annual membership with some nominal membership fee. Second, the membership allows the member a lower price on all the products carried by the Club-- that is, typically there is a price advantage over non-members for all products. Next, though a  
25 particular product may be offered by multiple vendors, the members do not get directly involved in negotiating with a particular vendor-- the Club negotiates the discount and each member decides whether he would like to buy the product or not at the stated price. Finally, since the negotiation is done directly by the Club, the members typically do not (and, indeed, have  
30 no reason to) coordinate their activities to decrease the price they pay for a

product. Thus, purchasers taking advantage of the available buying clubs are locked into a pre-defined arrangement and have no direct input into the choice of products offered or the discount available, nor are they able to coordinate their choices with other buyers.

## 5 **SUMMARY OF THE INVENTION**

To address the shortcomings of the available art, the invention allows buyers to aggregate their purchasing power to obtain volume discounts for specific products by using the Internet or a similar wide area network for buyers to coordinate purchasing of a given product and provide  
10 a communication and transaction medium for the buyers and the vendors. For example, an embodiment of the invention is a computerized system comprising: a) a Merchandise Submission Form to obtain sale information about a product from a vendor; b) a Bid Submission Form to obtain bid information for the product from a plurality of buyers; c) a Vendor Process  
15 Manager to store sale information in a Sale Database; d) a Bid Process Manager to store bid information in a Bid Database; and e) a Sale manager to match bid information and sale information and generate orders for the product. Preferably, the system provides that the vendor employ a volume discount price schedule. The system allows buyers to place and withdraw  
20 bids after the Start Time of the sale. After the Hold Time, only new bids and increased bids are allowed. Ideally, both the buyers and the vendor(s) communicate with the system via a wide area network such as the internet. However, other means of submitting and receiving information from the system are possible including automated telephone systems or  
25 even direct input and output, such as keyboard, monitor and printer.

In another embodiment, the system comprises a) Vendor Process means for obtaining sale information from a vendor about a product; b) Bid Process means for obtaining bid information for the product from a plurality of buyers; and c) a Sale means for matching bid information and sale  
30 information and generating orders for the product. The invention also is a

computer-implemented method comprising the steps of a) obtaining sale information about a product from a vendor; b) obtaining bid information for the product from a plurality of buyers; c) storing and organizing the sale information; d) storing and organizing the bid information; e) matching bid  
5 information and sale information; and f) generating orders for the product. The invention also comprises computer-readable media having instructions for carrying out the above steps.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

The aforementioned advantages of the invention, as well as  
10 additional advantages thereof, will be more fully understood as a result of a detailed description of a preferred embodiment when taken in conjunction with the accompanying drawings in which:

FIG. 1 is a schematic diagram of the inventive system including databases, managers, and input/output forms;

15 FIG. 2 is a flow chart illustrating the operation of the Vendor Process Manager of the present invention;

FIG. 3 is a flow chart illustrating the operation of the Bid Process Manager of the present invention;

FIG. 4 is a flow chart illustrating the operation of the Sale Manager  
20 of the present invention;

FIG. 5 is a flow chart illustrating the operation of the Invitation Manager of the present invention.

While the invention is susceptible to various modifications and alternative forms, specific embodiments thereof have been shown by way  
25 of example in the drawings and will herein be described in detail. It should be understood, however, that the detailed description is not intended to limit the invention to the particular forms disclosed. On the contrary, the intention is to cover all modifications, equivalents, and alternatives falling within the spirit and scope of the invention as defined by the appended  
30 claims.

**DETAILED DESCRIPTION OF THE INVENTION**

In a preferred embodiment of the present invention, the sale process is divided into three time periods. Once a vendor has submitted

5 information about a product, it is assigned a "Start Time," a "Hold Time" and a "Close Time". After the Start Time, buyers are free to place bids for the product. At the Close Time, any valid bids are processed and the product is sold at the price dictated by the number of bids. The Hold Time freezes a maximum price for the product by requiring users who have an

10 open bid at the Hold Time to honor that bid. After the Hold Time users cannot withdraw or decrease their bids, although they may increase it or add a new bid. Until the Hold Time, the user has complete freedom. Any buyer who had indicated an interest in the product can decide to increase the number of units being bid for, introduce a new bid, decrease the

15 number of units being bid for, or withdraw a bid completely.

Multiple vendors are invited to publish a description of the products they offer along with a price schedule that offers the price for a particular volume of the product. For example, a vendor could state a price schedule as illustrated in Table 1:

Number of units purchased at one time	Price per unit
1	\$100
5	\$95
10	\$85
50	\$75
100	\$65
1000+	\$50

20

Table 1

The above price schedule is quite typical, and might apply to products such as computers, books, CDs, and airline tickets, to name just a few.

In another example, the vendor desires \$10,000 for an amount of product up to a set maximum. The vendor specifies, for example, a maximum of 5,000 buyers. Accordingly, the price per buyer is \$10,000 divided by the number of buyers up to a maximum of 5,000. While this price schedule is currently not in much use, in the future it could be used as a means of selling products with a fixed cost of production and small or almost zero distribution costs. Examples of such products are research reports, music recordings, films, sporting events, and software. Without the method and system of the present invention, it would not be possible for a vendor to sell a product directly to the consumer using such a price schedule.

The vendor then sets the time frame for the sale by stating that the sale will open at Start Time and end at Close Time. The total number of buyers registered for the sale at Close Time would be aggregated and the final sale price for the product would be computed based on the total number of units for which the buyers have placed an order.

As shown in FIG. 1, one embodiment of the invention comprises a computer system comprising a number of software modules that generally include Forms that allow the input of information from vendors and buyers, Databases that organize and process the buyer and vendor information, and Managers that communicate the information between the Forms and the Databases.

Specifically, the Forms comprise: Merchandise Submission Form 102, which enables vendors to submit information about the products they want to offer; Invitation Submission/Acceptance Form 104, which enables buyers to invite others to the system and invited buyers to accept the invitation; and Bid Submission Form 106, which enables buyer to submit bids.

The Managers process and control the flow of information from the Forms and the Databases and comprise: Vendor Process Manager 110,

which controls the products placed for sale by a vendor; Sale Manager 112, which controls the initiation and the closing of a sale; Invitation Manager 114, which controls the invitation of other potential buyers to join the bidding process for a particular product; and Bid Process manager 116; 5 which controls the buyer's bids for a particular product being offered for sale. Functional details of the Managers are shown in FIGs. 2-5 and described below.

The Databases process the product, vendor and bid information and comprise: Vendor Database 120, which stores information about all the 10 participating vendors; Customer Database 122, which stores information about all the customers registered to participate in online purchasing; Merchandise Description Database 124, which stores information about each product offered for sale; Sales Database 126, which stores information about each sale known to the system; Bid Database 128, 15 which stores all the bids registered by customers for each sale; and Orders Database 130, which stores orders at the consummation of a Sale.

The operation of Vendor Process Manager 110 is illustrated by flow chart in FIG. 2. Generally, a vendor uses Merchandise Submission Form 102 to submit information to Vendor Process Manager 110 to first register 20 himself, if he or she is not already registered. The vendor then submits product information to be stored in the system. These functions are outlined by the following steps. At step 201, the system checks to see if the vendor is registered. This step also authenticates the vendor's identity. Various methods of identifying a vendor are envisioned, including reading 25 the vendor's network address, and other methods that will be known and understood by those skilled in the art to which the present invention pertains. At step 202, the vendor submits identifying information and registers with the system if the vendor is currently not registered with the system. At step 203, Vendor Process Manager 110 processes information 30 from Merchandise Submission Form 102. Specifically, the information is



- checked for validity and completeness, including ensuring that the vendor provides a volume-based price schedule for the product. If the vendor fails to provide a volume discount or if the information is incomplete or otherwise incorrect, at step 204 the vendor is notified of the error and
- 5 prompted to correct the information. At step 205 the verified merchandise description is forwarded to Merchandise Description Database 124. Finally, at step 206 the Sales Database 126 is updated with a new sale record containing information about the sale of the new merchandise just added to the Merchandise Description Database 124.
- 10 FIGs. 3A and 3B are flow charts illustrating the operation of Bid Process Manager 116, allowing a prospective buyer to register his interest in purchasing a particular product offered for sale by placing a bid for the product. FIG. 3A illustrates that at step 301 the system checks the prospective buyer to see whether he or she is registered with the system.
- 15 This also includes any authentication steps to verify the customer's identity. Preferably, this could be accomplished using automated identification and authentication processes, as will be understood by those skilled in the art. New customers are registered by submitting the requisite information at step 302. At step 303, the customer's instruction to place
- 20 a new bid in the sale or to increase the number of units in an existing bid is processed if the current time is between the Start Time and the Close Time. Instructions to decrease a bid or withdraw it altogether are processed at step 304 by checking to see whether the Hold Time for the sale has occurred. At step 305, an error message is returned to the
- 25 customer if the Hold Time for the sale has passed, informing the customer that the bid cannot be deleted or reduced. If the Hold Time has not passed, the customer's bid is deleted or reduced at step 306 accordingly, and Bid Database 128 is updated.

- At step 307, Bid Process Manager 116 computes a new price based
- 30 on the change in bid reflected after step 306. If the user submits a bid

identifying the product name and the number of units desired, the price is obtained by adding up the total number of units requested so far and using the vendor's price schedule to calculate the current price. Thus, if 120 units have been requested so far and the vendor is offering a price schedule  
5 including 100-120 units for \$5.50, then the current price is \$5.50 per unit.

If the user submits a bid including product name, number of units desired, and maximum bid price, then the price is obtained by: (i) calculating the total number of units desired thus far; (ii) using the vendor's price schedule to determine the current price; (iii) identifying all bids  
10 (matching bids) having a higher maximum bid price than the current price; (iv) computing the total number of units requested by the matching bids and using the vendor's price schedule to find out what the vendor's price would be for that volume; (v) if the price obtained from step (iv) is the same as the current price, then the current price is accurate, if not, then  
15 current price is set to the price computed in step (iv) and steps (iii) to (v) are repeated; finally, all bids identified in step (iii) at the termination of the process are the successful bids so far, and the price they would pay is the "current price" computed in step (v). If there are no successful bids at the conclusion of this process, then the current price is simply the list price.

20 New or increased bids processed at step 303 are verified at step 308, including checking to see whether the bid refers to the product offered in the sale, and if the quantity requested is currently available. The system returns an error message at step 309 if the bid is not validated at step 308. Conversely, as shown in FIG. 3B, validated bids are added to Bid  
25 Database 128 in step 310 and Bid Process Manager 116 computes a new price based on the changed quantity of bids in step 311.

FIGs. 4A and 4B illustrated in flow chart form the operation of Sale Manager 112, thereby including the steps taken to initiate a new sale and process the sale until through close. At any one time, every sale in Sale  
30 Database 126 is in one of four states: New, Active, Hold, or Closed. New

sales are added to Sales Database 126 based on the information obtained through Merchandise Submission Form 102 to Vendor Process Manager 110 as described above. Sale Manager 112 controls the process by which a new sale becomes Active, Held, or Closed.

5           Specifically, FIG. 4A shows that in step 401, Sale Database 126 is queried for all new sales whose Start Time is at or past the current time. At step 402, all such sales are marked as Active. In step 403, Active sales are communicated to prospective buyers, preferably through a wide area network such as the internet.. This includes retrieving the corresponding  
10 merchandise description information from Merchandise Description Database 124 and combining that information with the sale information, formatting all of it appropriately, putting the final description through an approval process that may be automated, and then publishing the information on the web.

15           At step 404, Sale Manager 112 queries Sale Database 126 for all Active sales with a Hold Time at or before the current time. At step 405, the appropriate sales are marked as Held, locking in the minimum number of bids. At step 406, the Sale database is queried for all Held sales with a Close Time that is at or past the current time, and those found are marked  
20 as Closed in step 407 such that no increases or new bids will be accepted.

          FIG. 4B shows the steps taken to close out a sale. At step 408, Closed sales are identified and, and step 409, queries are made of Bid Database 128 for all outstanding bids corresponding to the Closed sale. At step 410, the final sale price is recomputed in a manner based upon the  
25 number of bids and the volume-based price schedule given by the vendor. At step 411, the product vendor's information is obtained from the Vendor Database 120 and a purchase order is constructed for each customer whose bid remained outstanding at the end of the sale. The purchase order will state the number of units bid by the customer and the unit price will be  
30 the price calculated at step 410. At step 412, the processed bids are

deleted from Bid Database 128 and new orders created at step 411 are added to Orders Database 130. Finally, at step 413, the processed sale is deleted from Sale Database 126 and, at step 414, the process returns to step 408 until all closed sales are processed.

5        A flow chart for the operation of Invitation Manager 114 is provided in FIG. 5. Generally, customers invite other users to join the system and bid on products. Since the invention is predicated on the aggregation of buying power, it is in the interests of the buyers to recruit as many new buyers as possible. Potential users wishing to accept the invitation use  
10 Invitation Manager 114 to do so. The system routes the processes to one of two paths at step 501: steps 502-506 control an invitation sent from a current user to a prospective one, while steps 507-509 allow a prospective user to accept an invitation.

Current users wishing to issue an invitation are first checked at step  
15 502 to determine if they are registered. If not, they are registered and added to Customer Database 122 at step 503. At step 504, the system checks to see whether the invitation is valid. Invitation validity may be determined in a manner dependant upon the prevailing policies in the system, such as that a customer must invite another user to a specific sale  
20 only, or that no more than five users may be invited at any given time, or that the customer must fill out certain pieces of information about each user being invited to join. At step 505, an error message is returned if the invitation is not validated at step 504. Valid invitations are formatted and then communicated to the desired prospective users at step 506. Suitable  
25 means of communication include email, fax, web-posting, postal mail and the like.

Invited users are checked at step 507 to determine whether they are in Customer Database 122. If the invitee is already a registered customer, then Invitation Manager 114 simply reminds the user. Alternatively, at step  
30 508 the requisite information is obtained and the invitee is added to

Customer Database 122, thereby registering the user. Preferably, suitable identification of the invitor to the record of the invitee at step 509.

The present inventive system and method for aggregating buyers can be implemented in a number of ways. Different ways have different  
5 advantages and disadvantages, but any one of these approaches would afford a low volume buyer the opportunity to gain high volume discounts.

The invention differs from a typical purchasing club in the following ways. First, the buyer is not necessarily required to make an up-front commitment or execute an annual contract with any entity. A buyer who  
10 discovers an interest in a particular product can decide to register at that time and place his bid for the product. Second, the aggregation of purchasing power is for a specific product being bid on and not necessarily for all the products being offered at any given time. For a specific product, the bidding buyer has an opportunity for volume discounts based on how  
15 many other people bid for the product. Next, there is no intermediary or other entity that negotiates on behalf of the buyers. Multiple vendors may offer the same product and buyers place a bid with different vendors. The aggregation of their orders with a specific vendor as opposed to another vendor is the forum by which buyers directly negotiate how they wish to  
20 purchase a particular product. Finally, since the final price paid for a product depends entirely on the action of the temporary buying community that is created online, there is every reason for buyers to coordinate their actions. In fact, buyers may invite other prospective buyers who may not be aware of the existence of this vendor or product to join the community.  
25 This coordinated buying effort has a direct impact on the final price paid by the temporary buying community for that product.

The invention has significant differences from other e-commerce approaches. For example, in standard e-commerce a vendor places products for sale, usually with just one price. An interested buyer can  
30 purchase the product online. Even in the cases that a vendor posts a

volume based price schedule, it is always meant to apply to a single buyer who may buy multiple units to take advantage of the volume discount. This approach to e-commerce does not address how a low volume buyer can take advantage of the volume discount without having to personally buy

5 more units of the product. In another example, the Internet has popularized auction sites. Typically, multiple buyers bid competitively against each other for a given product. Under this model, the aggregation of buyers actually increases prices. In contrast, the invention described here lowers prices by aggregating buyers.

10 The present invention therefore provides a novel method and system for low volume buyers to aggregate purchasing power to gain high volume discounts. Although the present invention has been shown and described with respect to preferred embodiments, various changes and modifications lie within the spirit and scope of the claimed invention. For example, items

15 bid upon need not be intended for immediate delivery, but may instead be for a contract to take deliver of an amount of product over a period of time, such as a five percent discount for 1000 tons of product over three years and a ten percent discount for 2000 pounds of product over three years. The vendor may further require a minimum tonnage requirement over a

20 specified time period to bid, and discounts may vary based on any of the variables – such as amount, time to delivery, or price. Thus, the corresponding structures, materials, acts, and equivalents of all means or step plus function elements in the claims are intended to include any structure, material, or acts for performing the functions in combination with

25 other elements as specifically claimed.

**What is claimed is:**

1. A computerized system for aggregating purchasing power comprising:
  - a) a Merchandise Submission Form to obtain sale  
5 information about a product from a vendor;
  - b) a Bid Submission Form to obtain bid information for the product from a plurality of buyers;
  - c) a Vendor Process Manager to store sale information in a Sale Database;
  - 10 d) a Bid Process Manager to store bid information in a Bid Database; and
  - e) a Sale manager to match bid information and sale information and generate orders for the product.
2. The computerized system of claim 1 wherein the Vendor  
15 Process Manager requires a volume discount price schedule.
3. The computerized system of claim 1 further comprising an Invitation Manager to issue buying invitations to prospective buyers and accept buying invitations from prospective buyers.
4. The computerized system of claim 3 further comprising an  
20 Invitation Submission/Acceptance Form to obtain information for the Invitation Manager.
5. The computerized system of claim 1, wherein the Bid Process Manager allows new bids, increased bids, decreased bids and withdrawn bids for the product between a Start Time and a Close Time.
- 25 6. The computerized system of claim 4, wherein the Bid Process Manager prevents decreased bids and withdrawn bids after a Hold Time occurring between the Start Time and the Close Time.
7. The computerized system of claim 1, wherein buyers and the vendor submit and receive information from the computerized system by  
30 way of a wide area network.

8. The computerized system of claim 7, wherein the wide area network comprises the internet.

9. The computerized system of claim 1, further comprising a Merchandise Description Database to store product information and a  
5 Vendor Database to store vendor information obtained from the Merchandise Submission Form.

10. A computerized system for aggregating purchasing power comprising:

- 10 a) Vendor Process means for obtaining sale information from a vendor about a product;
- b) Bid Process means for obtaining bid information for the product from a plurality of buyers; and
- c) a Sale means for matching bid information and sale information and generate orders for the product.

15 11. The computerized system of claim 10 wherein the Vendor Process means requires a volume discount price schedule.

12. The computerized system of claim 10 further comprising an Invitation means for issuing buying invitations to prospective buyers and accepting buying invitations from prospective buyers.

20 13. The computerized system of claim 10, wherein the Bid Process means further comprises means to allow new bids, increased bids, decreased bids and withdrawn bids for the product between a Start Time and a Close Time.

25 14. The computerized system of claim 13, wherein the Bid Process means prevents decreased bids and withdrawn bids after a Hold Time occurring between the Start Time and the Close Time.

15. The computerized system of claim 10, wherein the Bid Process means and the Vendor Process means transmits information between the system and the vendor and the buyers over a wide area  
30 network.



16. The computerized system of claim 15, wherein the wide area network comprises the internet.

17. A computer-implemented method for aggregating purchasing power comprising the steps of:

- 5           a) obtaining sale information about a product from a vendor;
- b) obtaining bid information for the product from a plurality of buyers;
- c) storing and organizing the sale information;
- 10          d) storing and organizing the bid information;
- e) matching bid information and sale information; and
- f) generating orders for the product.

18. The method of claim 17, wherein the step of obtaining sale information further comprises obtaining a volume discount price schedule.

15          19. The method of claim 17, further comprising the steps of obtaining invitation information about prospective buyers and issuing invitations to the prospective buyers.

20          20. The method of claim 17, wherein the step of obtaining bid information allows new bids, increased bids, decreased bids and withdrawn bids for the product between a Start Time and a Close Time.

21. The method of claim 20, wherein the step of obtaining bid information prevents decreased bids and withdrawn bids after a Hold Time occurring between the Start Time and the Close Time.

22. The method of claim 17, wherein buyers and the vendor submit and receive information from the computerized system by way of a wide area network.

23. A computer-readable medium containing instructions for controlling a computer to aggregate purchasing power by:

- 30           a) obtaining sale information about a product from a vendor;

- b) obtaining bid information for the product from a plurality of buyers;
- c) storing and organizing the sale information;
- d) storing and organizing the bid information;
- 5 e) matching bid information and sale information; and
- f) generating orders for the product

24. The computer-readable medium of claim 23, wherein the instructions for obtaining sale information further comprise obtaining a volume discount price schedule.

- 10 25. The computer-readable medium of claim 23, further comprising instructions for obtaining invitation information about prospective buyers and issuing invitations to the prospective buyers.

26. The computer-readable medium of claim 23, wherein the instructions for obtaining bid information allow new bids, increased bids,  
15 decreased bids and withdrawn bids for the product between a Start Time and a Close Time.

27. The method of claim 26, wherein the instructions for obtaining bid information prevent decreased bids and withdrawn bids after a Hold Time occurring between the Start Time and the Close Time.

- 20 28. The computer-readable medium of claim 23, further comprising instructions for storing product information and for storing vendor information.

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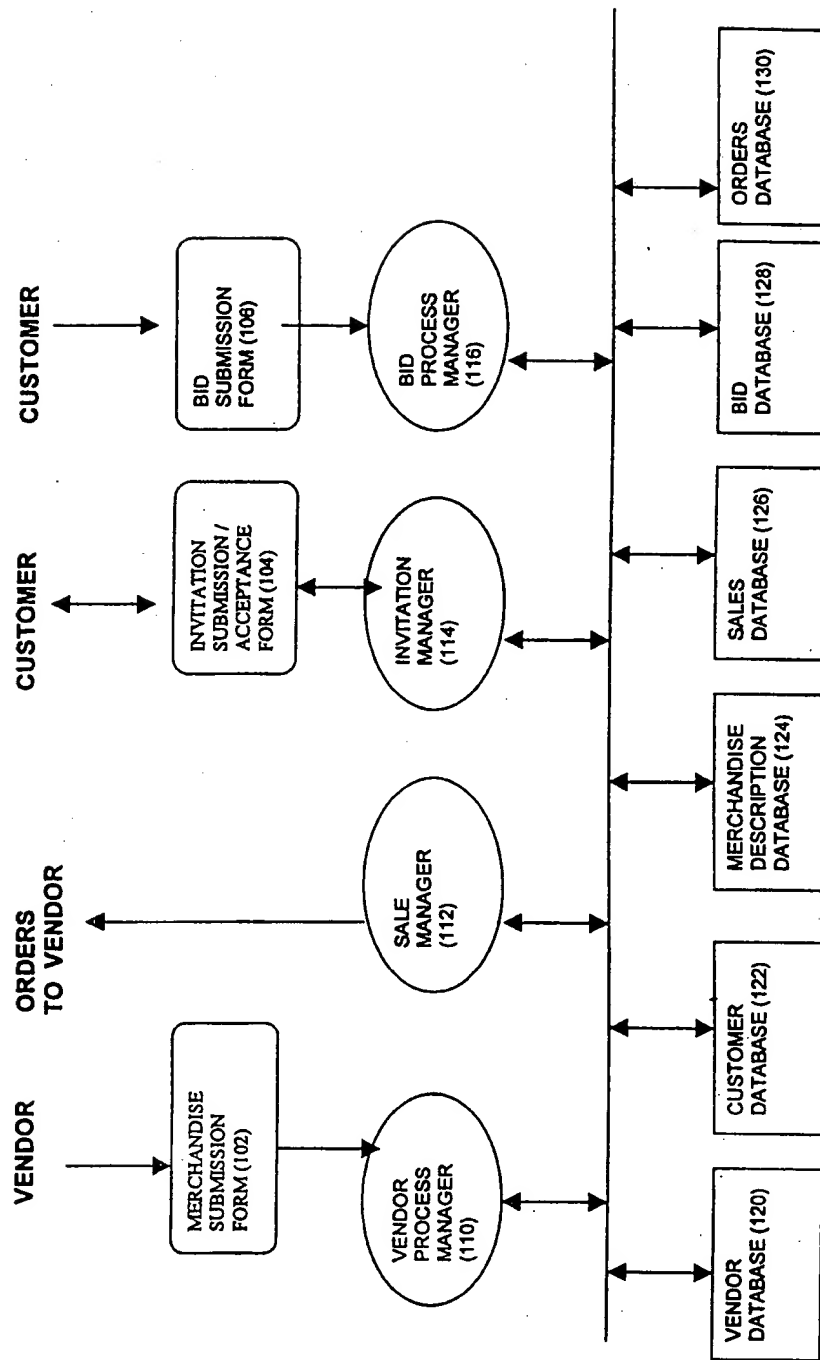


Fig. 1.

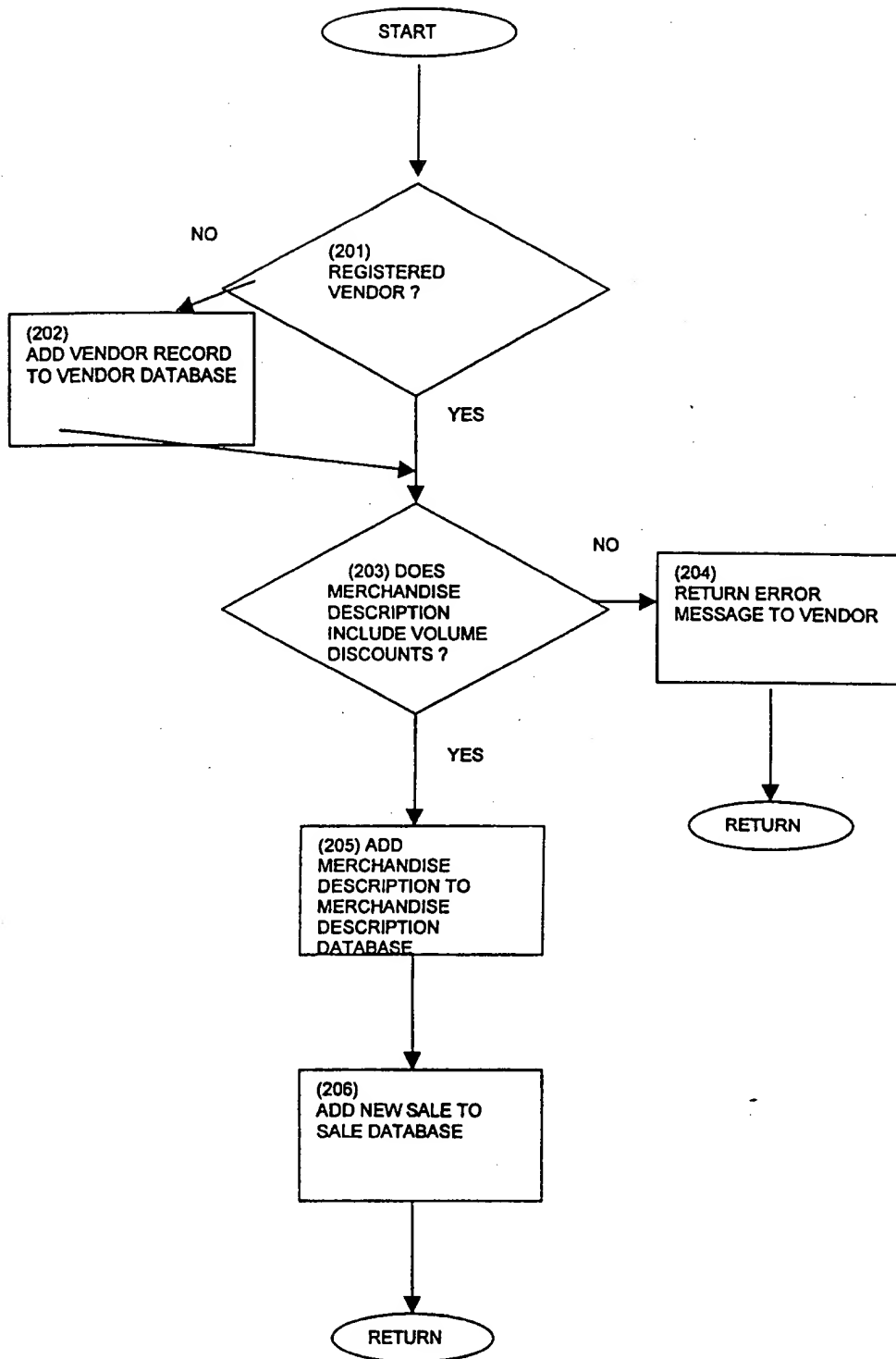
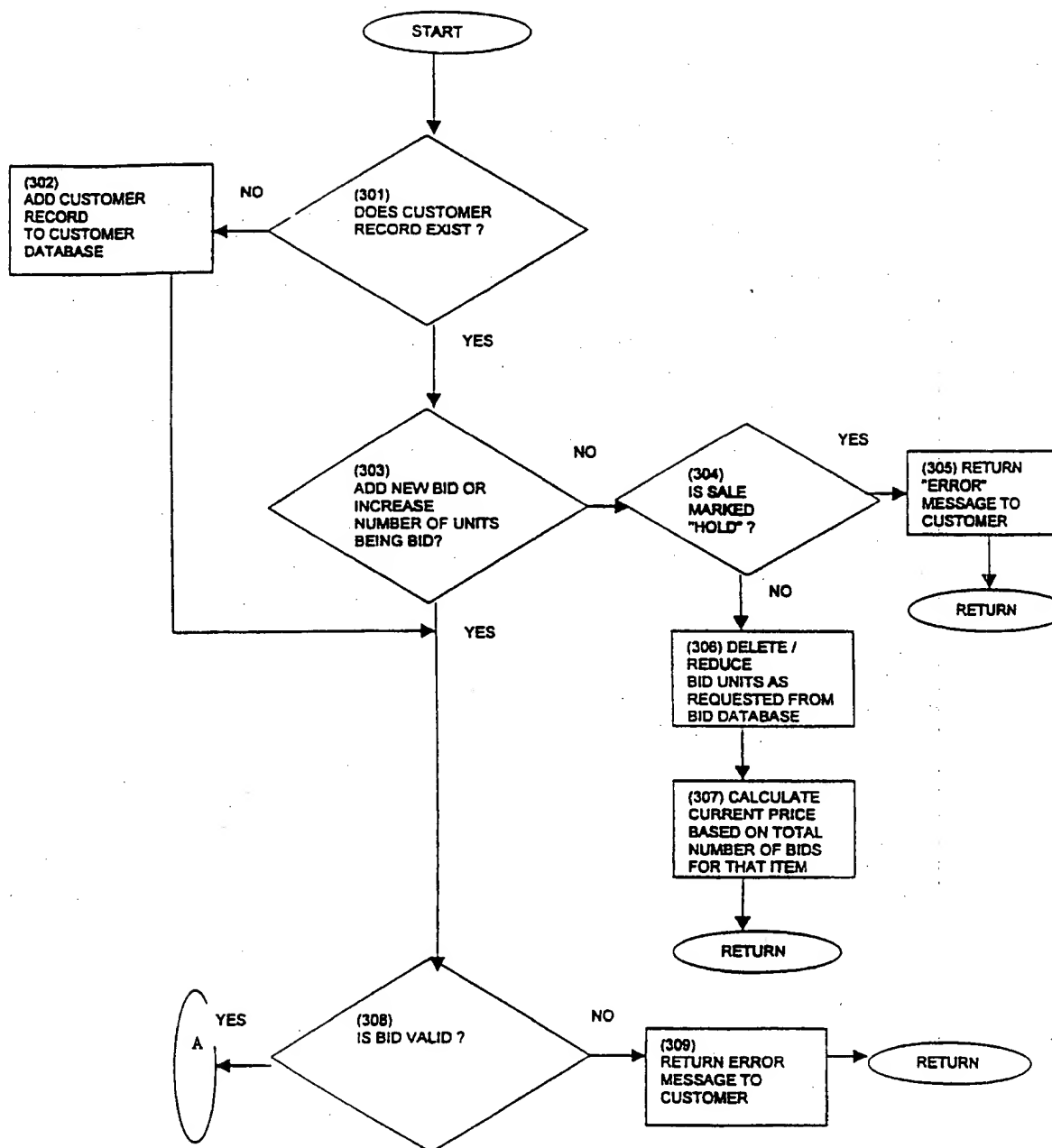
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Fig. 2

Fig. 3A.



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Fig. 3B.

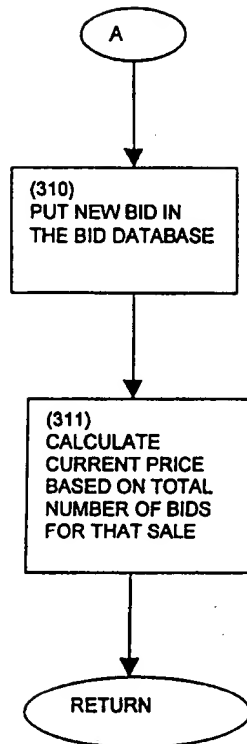
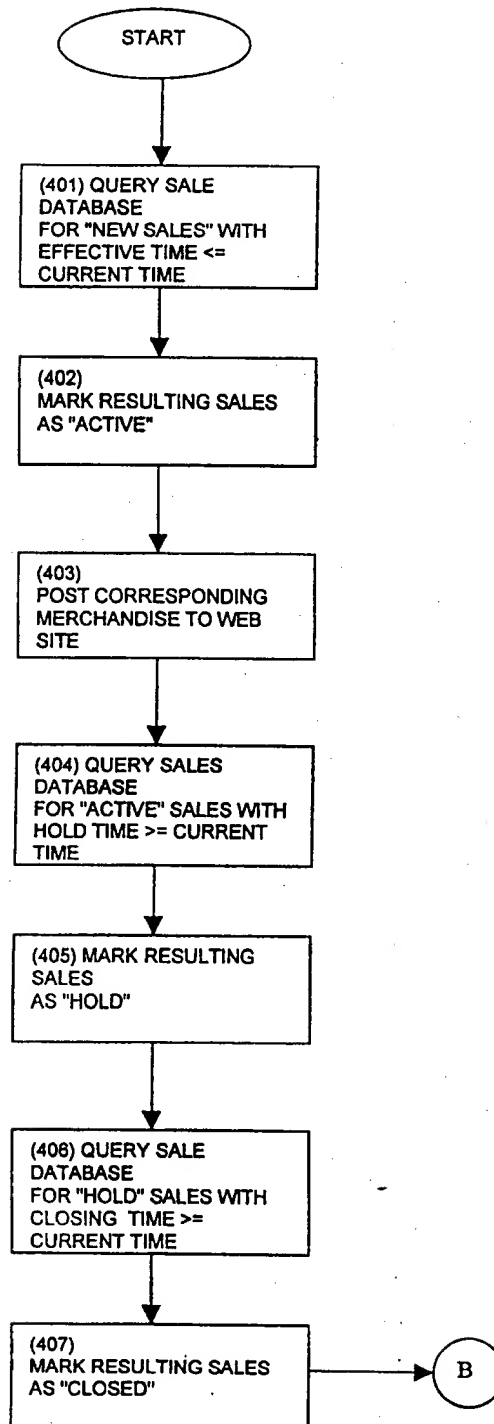


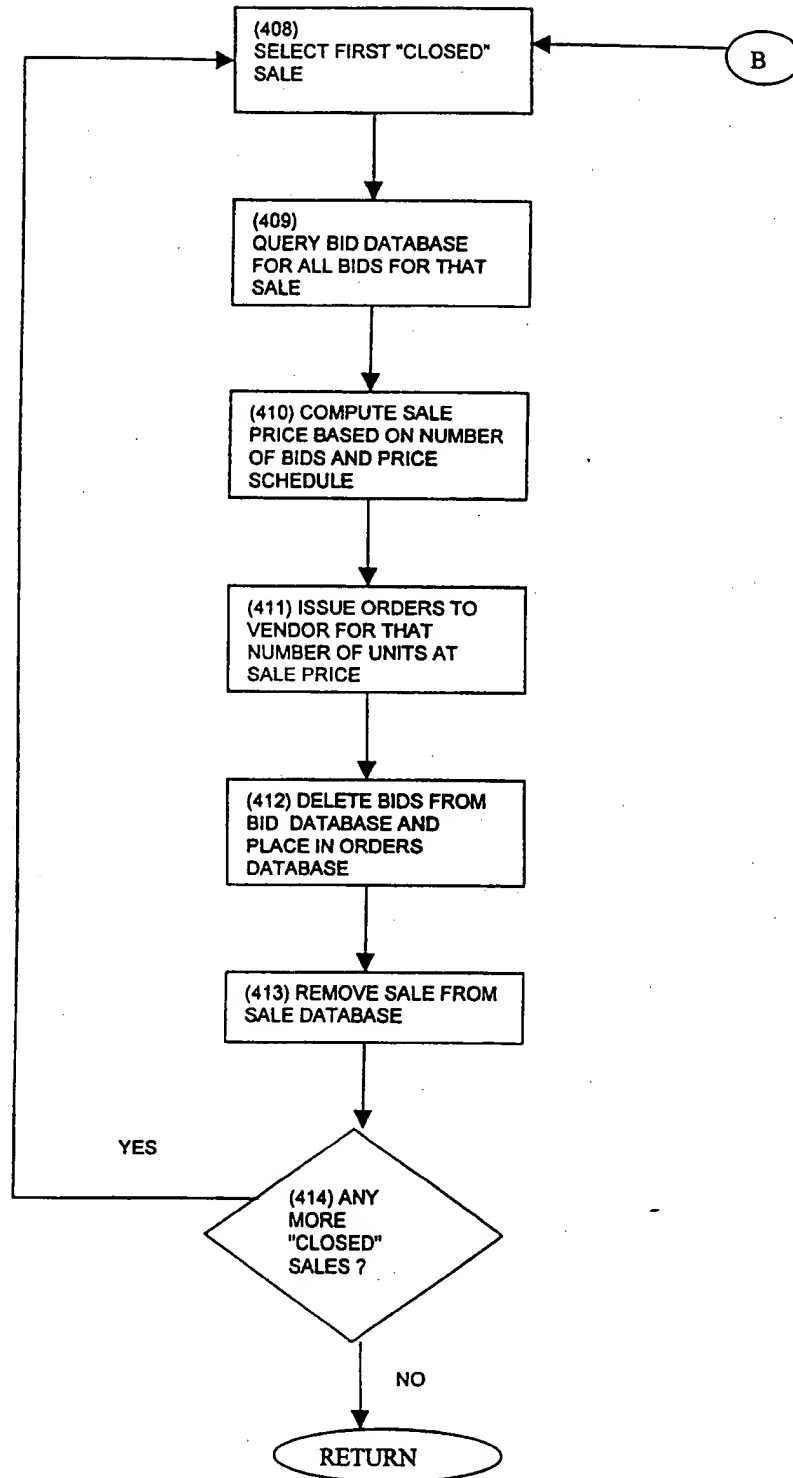
Fig. 4A.

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Fig. 4B.





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Fig. 5.

